ATTORNEY DOCKET NO. 14114.0353U2

1

SEQUENCE LISTING

```
<110> Oberste, M. Steven
Maher, Kaija
Kilpatrick, David R.
Pallansch, Mark A.
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<120> TYPING OF HUMAN NON-POLIO ENTEROVIRUSES
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<130> 14114.0353U2
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<140> 09/937,862
<141> 2001-09-28
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<150> PCT/US00/07828
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<151> 2000-03-24

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<150> 60/127,464
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<151> 1999-03-31

<160> 86

<170> FastSEQ for Windows Version 4.0

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<212> DNA

<213> Artificial Sequence

<220>

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gcrtgcaatg ayttctcwgt

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<222> (1) ... (18)

<223> n = a, t, c or g

20

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     ngcnccdgat tgntgscc
     <210> 3
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     <222> (1)...(20)
     <223> n = a, t, c or g
     <400> 3
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     gcnccngayt gntgnccraa
     <210> 4
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     <222> (1)...(20)
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                                                                              20
     atgtaygtnc cnccnggngg
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     ggngcrttnc cytcngtcca
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<221> misc_feature
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<223> n = a, t, c or g
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acrtgncnng tytgcatngt
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<223> n = a, t, c or g
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awnttytayg ayggntgg
<210> 8
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<223> n = a, t, c or g
<400> 8
                                                                          20
tananngtnc ccatrttrtt
<210> 9
<211> 20
<212> DNA
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CS9"" SSE OSES
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<222> (1)...(20)
<223> n = a, t, c or g
<400> 9
                                                                          20
atgtayrtnc cnmcnggngc
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<223> n = a, t, c or g
<400> 10
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ggnggnggrt cngtnakytt
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<400> 11
                                                                         20
gangaraayc tnatngarac
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CASTIST OFFI
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<223> Description of Artificial Sequence; Note =
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<221> misc_feature
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<223> n = a, t, c or g
<400> 12
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cccatnakrt cnatrtccc
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<221> misc_feature
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<223> n = a, t, c or g
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gtrctyacna nnagrtcyct
<210> 14
<211> 19
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<221> misc_feature
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<223> n = a, t, c or g
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tsaarytgtg caargacac
<210> 15
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<223> n = a, t, c or g
<400> 15
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stgyccagat ttcagtgt
<210> 16
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<221> misc_feature
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                                                                         20
gccntrttnt grtgnccraa
<210> 18
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WALL BENTHER TONDON
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 <222> (1) ... (20) '
 <223> n = a, t, c or g
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                                                                           20
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 <222> (1)...(20)
 <223> n = a, t, c or g
 <400> 19
                                                                           20
 acngengyng aracnggnea
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                                                                           19
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                                                                        20
cargengeng aracnggnge
<210> 22
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<223> n = a, t, c or g
<400> 22
                                                                        19
cnccnggngg nayrwacat
<210> 23
<211> 888
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
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<400> 23
                                                                        60
ggattgggcg attctattga ggctgccatt gacagcatca cacaaaatgc actaaccact
gtacaaaata caacacaatc aggacctact cattcaaaag aagttccagc attaacagca
                                                                       120
gtggaaacag gtgctactag tcaagtagaa ccaggtgact tgattgaaac cagacatgtt
                                                                       180
                                                                       240
ataaacatga gacaaagatc tgaagcatct atcgaatctt tctttggccg atccgcatgt
gttgcgatac ttggtttgtc aaacgccaaa ccaactgaca caaacaccaa acaattgttc
                                                                       300
aaaacatgga gaatatcata tttagaaact caccaactca gaagaaaact tgagttcttt
                                                                       360
acgtactcaa ggtttgattt ggaaatgacc atagtaatta cagagagggt tttcaatgca
                                                                       420
gtcaatgtcc cattgcgcaa ttatgtgtac caaataatgt acgttccccc aggtgctcca
                                                                       480
gaaccacaat catgggatga ttacacgtgg caatcttcta ccaacccatc aatattctac
                                                                       540
accactggaa atgctcctcc cagagtgtca attccatttg ttggaatagg gtctgcatat
                                                                       600
tcacactttt atgatggttt ctcacagatt cctcttgact caatcagtgc tggagcaagt
                                                                       660
aataagtatg gttacacttc aatcaatgac tttggtaccc tggcaattag aatagtaaat
                                                                       720
gaatatgacc cagtgcaagt ggatgcaaag gcccgagtgt atattaaacc caaacatgtt
                                                                       780
cgcatgtggt gccccagacc accacgggcc atgccttaca agaatagcac agtggatttc
                                                                       840
gacccatcag caactgtaat gacccaagtc gcagacatca ggacgtat
                                                                       888
<210> 24
<211> 882
<212> DNA
<213> Artificial Sequence
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ggagatccag tggaagactt aatcgccaat acagttgcta ggactctaga gagaataacc
                                                                        60
totocaacto ataatacaac ggcaggcaac accaccgtta gcgagcacag catcggtacc
                                                                       120
ggttcagtgc ctgcgttgca agctgctgag actggggctt cgtctaacac cacagatgag
                                                                       180
agtatgatag aaacacggtg tgttgtcaat aggaatggag tgattgagac tagcatcaac
                                                                       240
                                                                       300
catttcttct cccgagcggg gcttgtggga gtgctgaaca tacttgatgg aggcacctca
aaaggetttg aagtttggga tatagacate atgggetttg tteagetteg cagaaageta
                                                                       360
gagatgttca cctacatgcg gttcaacgct gaattcacct ttgtcgcgac tttgagtgac
                                                                       420
ggaacaactc cccatataat gttgcaatac atgtatgtgc cccctggagc tcccaaacct
                                                                       480
caggaaagag attcattcca atggcagact gcaaccaacc catccgtgtt tgcgaaaatg
                                                                       540
agtgaccete etcegeaagt tteagtacet tteatgtete etgetagege etaceagtgg
                                                                       600
ttttatgatg ggtacccaac atttgatgat agaccacaga cctctaatcg tccctacgga
                                                                       660
caatgcccca ataacatgtt gggcacattc gcggtgcgca ttgttagcaa gacgcctgcg
                                                                       720
gagagagact tgcgcgtccg tgtttacatg aaactgaagc atgtgcgagc atgggtaccg
                                                                       780
cgacccataa ggtcacagcc ttacgtcttg aagaactacc ccaactatga tggaacccaa
                                                                       840
                                                                       882
atcgtgccca gtgccaaaga tcgagaagac ataaagaaca ca
<210> 25
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<211> 915 <212> DNA <213> Artificial Sequence

.

<220>

<400> 24

<400> 25 ggtgatgcaa tcgctgatgc tatacaaaac acagttacat ctactataca gagagtcaca 60 accaacactg ttgggcaaga tgcaacagct gctaacacag cacccagctc tcatagtttg 120 180 aacactggcc tagtccccgc gcttcaagct gctgagacag gagcttcatc cacagccacg gatgggaatt tgattgagac tagatgtgtt gtaaactcca atggtacacg tgaaacccac 240 300 attgagcatt tettetetag gteagggetg gtgggagtta tggaggtaga tgataegggt 360 actagtggca agggattctc aaactgggac attgacatca tggcgtttgt gcaactgcgc 420 cgtaaactcg aggcatttac atatatgcgg ttcgacgcag agtttacctt tgtcaccaat 480 ttggagaacg ggctcacgaa taatagtgtg atacagtaca tgtatgtacc acctggagcg cctaaacccg atgcccggga atcattccag tggcaaactg caaccaatcc gtcagtcttt 540 caaaaaatgg acagtccgcc acctcaagtt tcagtaccct tcatgtcacc agccagtgcc 600 660 tcttacgggc aatgtcccaa taatatgctg ggaacattct cggccagggt tgttagcaag 720 caaatcacca atcagaaatt ccagatccgt atttatctac ggctgaagag ggtgagggcg 780 tggatcccca gacctttgag atcgcagccg tacatttaca gaaactaccc cacctatggt 840 900 actaccatcc aatacctggc caaagatagg cgcaagatca ctgaaactga ttataatgct 915 gaacagcgca cgcat

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<210> 26
<211> 885
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence; Note =
      synthetic construct
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ggcagaccaa ttgcagatat aatagaagga gcagtagctc aaactaccac cagagcacta
                                                                        60
                                                                       120
agtggaccaa ttcagccagt gacagcggcc aacacctctc ccagttcaca tcggcttggt
acggggcaag tgccagcttt gcaagcagca gaaacgggag ccacctcgaa tgcgaccgac
                                                                       180
                                                                       240
gagagtttga ttgaaaccag gtgtgtggtc aacagacatg gagtcatgga aactagcatt
gaacacttct tttcacgctc aggcttggca ggaattttga taattgagga ctccggtact
                                                                       300
tccacgaaag gctacgccac ttgggaaatc gatgttatgg gatttgtcca gctgaggcgt
                                                                       360
                                                                       420
aaactagaga tgttcacata catgcgattt gatgcagagt tcacctttat cacagcagaa
aggaatggca acaccagccc aatacccatc cagtacatgt atgtcccacc cggagcccca
                                                                       480
gtccctactg gtagggagac attccaatgg caaacagcga ccaatccatc cgtgatctca
                                                                       540
                                                                       600
aagatgactg atccaccagc ccaggtgtct gtaccattta tgagcccagc cagtacttat
caatggttct acgatggcta ccccacgttc ggagaagttc cagtgactac gaacttgaac
                                                                       660
tatggacagt gcccaaacaa caaaatgggc actttctgca tccgcatggt ctcaggtgta
                                                                       720
tctacaggca aggacgtcac tgtgcgcatt ttcatgaagt tgaagcatgt gcgcgcctgg
                                                                       780
                                                                       840
gtgccaaggc ccatcaggag ccagccttac ttgttaaaga attatcccaa ctttgacaag
                                                                       885
tcaaatattg tagacgcatc atcgaacagg acatatacca ccact
<210> 27
<211> 915
<212> DNA
<213> Artificial Sequence
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|---|-----|
| aatgacccca tttcaaatgc aatagaaaat gctgtgagca cactcgctga caccacgata | |
| tcacgtgtta cagcggccaa cactgctgct agctcccatt cccttggtac tggacgcgtg 1 | 120 |
| ccggcgttgc aggctgcgga gacaggggca agttccaacg ctagcgatga gaacctgatt 1 | 180 |
| gaaactcgtt gtgtgatgaa tagaaatgga gttaacgaag caagtgtaga acacttctac 2 | 240 |
| tcccgtgcag ggctagtagg agttgtggag gtgaaagact caggcactag tcaggacggg 3 | 300 |
| | 360 |
| tctacttaca tgcgctttga cgctgaattt acctttgtgt ccaatctcaa tgacagcaca 4 | 120 |
| acacceggea tgctattgea gtacatgtac gtgccgccgg gtgcgcccaa accagacggt 4 | 180 |
| aggaagtcat atcaatggca aacagccacc aacccttcaa tattcgcaaa gttgagtgac 5 | 540 |
| | 500 |
| | 60 |
| | 720 |
| | 780 |
| | 340 |
| | 900 |
| | 915 |

660

720 780

840 882

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<210> 28
<211> 888
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
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                                                                        60
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                                                                       120
agctcaatcg acaccaaaac tggtgctaac actcaagcta gccaacatcg tataggcttg
ggggaggttc ccgctcttca agctgctgag acaggatcgt cttcgctcgt ttcggacaag
                                                                       180
aacatgatag aaacaaggtg tgtcgtaaac aaacacagca cagaggaaac cagcattaca
                                                                       240
                                                                       300
aacttctact ccagggcggg cctagtgggg gttgtgaaca tgccagtaca aggaaccagc
aacacaaagg gtttcgcaaa gtgggggata gatataatgg gctttgtgca gatgaggcgc
                                                                       360
aaacttgagc tcatgacata catgagattc tccgccgagt ttacgttcgt acccagcact
                                                                       420
cctgggggag agactactaa ccttatactg caatacatgt atgcacctcc cggagctccg
                                                                       480
ctgccaacca ggcgggattc atacgaatgg caaacatcca ctaacccctc tattatcagc
                                                                       540
                                                                       600
aaqatqqcqq acccaccqc tcaggtatcg gttccattcc tttctcctgc atcagcatat
cagtggttct atgatggcta ccccacattt gggaaacacc caatagatca ggacttccaa
                                                                       6.60
                                                                       720
tatggcatgt gcccaaacaa catgatgggc acattctgtg tgcgcatgat cggtgggggc
aaaccgaccc aatcagttac catacgtata tacatgagat taaagcatat ccgtgcatgg
                                                                       780
                                                                       840
gtgccccggc cactgaggag tcagaattac actatgagga attacccgaa ctacaacggg
                                                                       888
ggcgcaataa aatgtacatc aaaaagcaga gctaccataa caacctta
<210> 29
<211> 882
<212> DNA
<213> Artificial Sequence
<220>
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                                                                        60
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gcccatcac acgacactac agcagccaac acctcagtga gtaatcataa aattggtacg
                                                                       120
ggggatgtcc cagctctcca agctgcagag actggcgcta cttccaatgc ctcagacgag
                                                                       180
aacatgattg agacacgatg tgtgttaaat cgcaatgggg ttgtggaaac tagtttggac
                                                                       240
                                                                       300
catttctttt caagagcagg ccttgtggga gtgatcaatg tgcaagatgg cggcactcag
                                                                       360
aagggttttg aagtgtggga catagatgtc atggggtttg ttcaactcag gaggaagttg
gagatgttca cgtacatgag gttcaacgcc gagttcacat tcgtatccac actcgcggat
                                                                       420
ggcacaactc ccagagtgat gttgcagtac atgtacgttc cacctggtgc ccccaaacct
                                                                       480
```

caggagagag attcgtttca gtggcaaact gcaaccaacc catcagtatt ttgcaaaatg

agtgaccete etecacaggt tteegtteet tteatgteae eagetagtge etaceaatgg ttetacgatg ggtacceaae attegatgat egaceggeea ceteaaacea eeegtaeggt

cagtgcccca ataacatgat gggcacattc gcagtgcggt ttgtcagcaa gaccccagcc

acacgggatc tgcgtgtcag agtgtacatg cgcctgaaac acgtgcgcgc atgggtaccg agacctatcc gatctcaacc ctatattttg aaaaactacc caaattatga tggcacaaag

ataacgtcga catctaagga taggcaaagc atcaaaacaa ca

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<210> 30
<211> 894
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
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ggcgaccccg tggaggacat catccacgac gctttgagca gcactgtgcg gcgggccata
                                                                        60
actagtggtc aagatgtcaa cacagcggcc ggtaccgctc ctagctctca caggttggag
                                                                       120
                                                                       180
actggtcgtg ttcccgccct acaagcagca gaaactggag ccacttctaa cgctacagat
gagaacatga tagaaacgcg gtgtgtcatg aacagaaatg gagtgttgga ggcgactata
                                                                       240
                                                                       300
agtcatttct tctcacgctc aggtttggtg ggtgttgtca atctaactga cggaggcacc
gatacaacgg gatatgcagt gtgggacatt gacatcatgg gttttgtgca actgcggcgg
                                                                       360
aaatgtgaga tgttcacata catgagattc aacgctgagt tcacattcgt cactacaaca
                                                                       420
gaaaatggcg aggcaaggcc atttatgtta cagtatatgt atgtacctcc aggtgcccct
                                                                       480
aagccaacgg gtagagatgc ttttcagtgg caaacagcga caaatccatc cgttttcgtt
                                                                       540
                                                                       600
aageteacag atecacetge teaggtatea gteceettea tgteacetge tagtgeetae
caatggttct atgacgggta tccaacattt ggacaacacc cggaaacatc taatacaaca
                                                                       660
tatggacagt gccctaacaa catgatgggg acctttgctg tgagagtagt gagtagagtg
                                                                       720
gctagccagc tcaaactaca gacacgagtg tatatgaagc ttaagcatgt gagagcatgg
                                                                       780
atccctaggc caataagatc ccagccttac ctcctaaaga attttccaaa ttatgatagt
                                                                       840
agtaagatca catacagcgc aagagatcgt gccagcataa aacaagctaa tatg
                                                                       894
<210> 31
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<212> DNA
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| <400> 31 | | |
|--------------------------------|---|-----|
| gggccaatag aagaaatcat ctcaacte | gtt gccagtaacg cgttggcgct cagtcaaccc 6 | 0 |
| aagccagtgg acaactctgt acaaaaca | acc caacaaagtg ctccagtgca tagccaggag 12 | 0 |
| gtgccagcat tgaccgcagt ggagacag | ggg gcgacaagtg atgtggttcc atctgaccta 18 | 0 |
| | aaa tccaggtctg aatccaccat cgagtcattt 24 | 0 |
| | atg caggtggaca atttcaacgc aacctctgtg 30 | 0 |
| | tgg gcaatcacct acactgatac cgtccagctg 36 | 0 |
| | tct agatttgact tagagatgac ttttgtgcta 42 | 0 |
| | ggg catgctagat ctcaggtgta ccaaattatg 48 | 0 |
| | agt gcatgggacg actacacatg gcaaacatcc 54 | 0 : |
| | ggc aatgcaccac cgcgcatttc aattccattt 60 | 0 |
| | ttt tatgatggct ttagtagagt acctttggag 66 | 0 |
| | tac tacgggctca cttcaataaa cgattttggt 72 | 0 |
| | tac aacccagcca gggtggagac aaggattaga 78 | 0 |
| | gtc tggtgcccgc gacctccaag agcggtaagc 84 | : 0 |
| | tca acatcagtaa cacctttatc caaacatgac 90 | 0 |
| ctagcgacat ac | 91 | .2 |
| 3 3 | | |

660 720

780

840

900 927

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<210> 32
<211> 888
<212> DNA
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<223> Description of Artificial Sequence; Note =
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                                                                        60
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actacccaga cacaccagac agcagctgac actagagtta gtacacacag gttaggcacg
                                                                       120
ggggaggtgc cacctttaca agcagcagag acaggtgcca cctccaacgc aaccgacgag
                                                                       180
                                                                       240
aacatgattg aaacacgctg tgtcgtcaac aggcacgggg tgagcgagac cagcgtggaa
                                                                       300
tacttcttct ctcgctctgg tttggcagga atagtcatcg tggaggatgc aactgccact
aataagggtt atgccacatg ggagattgat gtcatggggt tcgcgcaact gcgtcgcaag
                                                                       360
ctggagatct tcacatacat gcgcttcgat gcagagttca cttttgtggc aacagaacgc
                                                                       420
aatgggagca ccagcccggt catgatgcag tacatgttcg tgccccctgg cgcccctgtt
                                                                       480
ccaacaggga gagatacctt ccaatggcaa tctgctacta acccttcagt gctagtaaaa
                                                                       540
                                                                       600
atgacggatc caccggcca agttgccatc ccctttatgt ctccagctag tgcataccaa
tggttctatg atggatatcc tacctttgga gaaagaccag ttacaaccaa catgaattat
                                                                       660
ggacagtgtc ccaacaacaa aatgggaact ttttgtatac gcactgtctc cggtgaagcg
                                                                       720
tcagggaaaa acatcactat acgtattttt atgaggttga agcatgtaag agcgtgggtg
                                                                       780
                                                                       840
cctcgcccaa ttagaagcca gctatatctg cttaaaaaatt accccaactt tgataacact
                                                                       888
aagatcctca acgcctccca caacagagct tctatcacat caaacaca
<210> 33
<211> 927
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 33
gggttggaag atctaataca acaagttgcg tctaacgcat tacaattgtc ccagccaaca
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agaccggcac tcccaccagc cgagcagagt gtccccaaca ctaaccaaac aactccagaa
                                                                       120
                                                                       180
cactccaagg aagtcccagc gttaacggca gttgaaactg gcgccacgaa tcctctagag
cctqqcqaca caqttcagac tagacatgtg atacaaacta gaagtagaag tgaaagtaca
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gtggagtctt tctttgcgcg aggtgcatgt gtaaccatta tgggagtgga caactataat
                                                                       300
gagacattga aaggagacca gaagtctact ctatttacaa cctggaacat cacctacact
                                                                       360
gacacagtcc agctacggag aaaactggaa atgttcactt actccaggtt tgacatcgag
                                                                       420
                                                                       480
tttacttttg tggtgactga acgctactac tcatcaaaca gtgggcatgc tctgaaccaa
gtgtaccaaa ttatgtatgt accacctgga gcaccagtgc caaagaaatg ggatgattac
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acctggcaaa cctcttcaaa cccgtccata ttctacactt atgggtcagc accacccagg

atatccatac cctttgtggg tatagcaaac gcttactccc acttctatga tgggtatgcg

acaqtqccct tqaaaactga caccacagac tcaggagcag cctactatgg agcagtatcc

ataaacgact tcggactgct tgcagttcgc gtcgtcaatg aacataatcc agtcagagta tcatccaaaa ttagagtgta tatgaaacca aaacatgtca gggtatggtg tcccagacct

ccaagggctg tagagtatta tggaccagga gtggactaca aggcaaacac tttaacaccg

ttqccaataa agaatttgac tacttat

600

660

720 780

840

900

912

ttgacaacgt ac

```
<210> 34
<211> 888
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 34
ggtgacaaag tggcagacat gattgagacc gcagtggaga agaccgtgtc ctcactaact
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tcccctattc aaacccccac agccgccaac acaaacgtga gtaatcatcg aattgagctg
                                                                       120
ggggaagtcc cggctttgca agctgctgaa accggcgcga cgtctcttgt gtctgatgaa
                                                                       180
                                                                       240
tacttgatag agactcgttg tgtagtgaat agccatagta cagaggaaac tacagtgggg
                                                                       300
cacttetttt caagageggg gttggtggga gtgattgace teccattaca gggaacagte
                                                                       360
aacacaggag gattcgcctc gtgggatatt gatgtaatgg gatatgttca gatgagaagg
aaacttgagc tgttcacata tgcccgcttc gatgcggagt ttaccttcat agcttccacc
                                                                       420
ccagatggcg aggtgaagcc agtgttctta cagtacatgt tcgtcccccc tggtgcacca
                                                                       480
aaaccaacag ggcgcaacac ctacgaatgg caaactgcaa caaacccttc tgtgttggtc
                                                                       540
aagagcacag atcctccagc acaagtctct gtaccgttca tgtcaccagc cagcgcatat
                                                                       600
cagtggttct atgacgggta cccaaccttt ggaaagcacc tgcctgctga tgactttcag
                                                                       660
tacggtatga ccccaaataa catgatggga tcgttctgtg ccaggatagt gggggaagga
                                                                       720
gcgcctagtg tacacttggt tatccgtatc tacatgcgca tgaaacacgt gcgggtgtgg
                                                                       780
attccacgac ctatgcgcag ccagccatac gttgcgaaga attaccctaa ctacaagggt
                                                                       840
                                                                       888
tctgagatca agtgcgcatc atctagtcgt aagtcaatca ccacatta
<210> 35
<211> 912
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 35
gggccaatag aggagateat etegacegte gecageaatg caettgeeet cagteageet
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aaaccggtgg ataattctgt acaaaacacc caacagagcg cgcccgtgca cagccaagag
                                                                       120
gttccagcat taacagcagt agagactgga gcaacaagtg atgtggtgcc agctgatcta
                                                                       180
                                                                       240
gtgcaaacca ggcatgtagt gaatgtcaag tccagatctg agtccactat cgagtcgttc
                                                                       300
tttgcaagag ctgcctgcgt gactattatg caggttgata actttaatgc caccaccacg
gaggacaaga ggaagttatt tgccaaatgg gccatcacat acacagacac agtacaattg
                                                                       360
aggaggaaat tggaattttt cacgtactcc aggttcgatc ttgagatgac tttcgtgcta
                                                                       420
actgaaagat actattctca gagctcggga cacgctagat cgcaggtgta tcaaatcatg
                                                                       480
```

tacgtccctc caggagcacc aacaccaaat gcatgggatg attacacgtg gcagacgtct

tctaacccat caattttctt caccactggt aacgcacccc cacgggtttc aatcccattt

gtgggcattg caaatgctta ctcacacttt tatgatggct tcagcagggt acctttggaa

ggagagacca ctgactcagg tgacgcttat tatggcctca cttctatcaa tgactttgga

acacttgcag taagagtggt caatgactac aacccagcga gagtggagac aaggatcaga

gtctacatga aacctaagca tgtgagagtg tggtgtccac gaccccctag ggctgtgagc

tacagaggac ccggtgtgga cctactgtcc acctcagtga cgcccctatc taagcatgaa

```
<210> 36
<211> 918
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 36
ggcattgaag acttgatcca acaggttgca tcgaatgcgc tgcaaatctc acagccgacg
                                                                        60
cgtccggcac tgccctctac agaaagtctt cccaacacac aacaatcggc accttcgcat
                                                                       120
                                                                       180
tctcaagagg tcccggcgct gacagcagtt gagacaggcg cgacaaatcc attggagccg
tctgacacgg tacaaacaag gcatgttatc cagactagat ccaggtcaga gtccacaata
                                                                       240
                                                                       300
gagtccttct tcgcgcgtgg tgcatgtgtg acaatcatga cagtggaaaa ttttaacgcg
actgaggcgg cagacaagaa aaagttgttc gccacttgga atattacata cacagacaca
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gtgcagctca gaaggaagtt ggagatgttc acttactctc gatttgacat tgaatttacc
                                                                       420
tttgtcacca cagaaaggta ctacgccagt aactcaggcc atgcgcgtaa tcaggtttac
                                                                       480
caactcatgt atgtaccccc aggagcccct gtgccacaac aatgggatga ttacacgtgg
                                                                       540
caaacttcct ccaacccatc ggtgttttac acatacggtg acgctccagc gcgcatttcc
                                                                       600
ataccatttg tagggatagc taatgcctat tcccactttt atgacggcta tgcagtggtg
                                                                       660
ccattgaaag attccaccca ggatgctggt gctgcctatt atggtgcaac ctcaattaat
                                                                       720
gattttggaa tgttggcggt gagagtagtc aacgaattca acccagccag aatcacatct
                                                                       780
                                                                       840
aaattgagag tgtacatgaa accaaagcat gttagggtgt ggtgtcctag accaccaagg
gtggtgccgt acttcggacc cggtgttgat tataaggata gtttgacacc gctttctaca
                                                                       900
                                                                       918
aaagcactca acacttat
<210> 37
<211> 927
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 37
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```
ggcttggaag acctcatcca acaagtggcc acgaatgcat tgagtctgtc gcagcccaca
                                                                         60
agacccgcac ttccaccagc agaacaaagt gtgccaaaca ccagtcagac caccccagaa
                                                                        120
                                                                        180
cattcaaagg aagtacccgc actcactgca gtggagaccg gtgcaaccaa cccattggaa
                                                                       240
ccaggtgaca cagtgcaaac tagacatgtt gttcaaacaa gatcaaggag cgaaagtacg
gtggaatctt tctttgcaag aggggcgtgt gtcacgatta tgggagttga caattacaat
                                                                        300
gaaagettga ecagtagtea aaaateeace etattegeea ettggaatat tacatacaet
                                                                       360
                                                                       420
gatacagtac agttgaggag aaaattggaa atgttcacct actccagatt tgacattgaa
tttaccttcg tagtaactga acgttactac tcgtcaaaca gtggccatgc cttgaatcag
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gtgtatcaaa tcatgtatgt gccaccaggc gctccaattc ctaagaagtg ggatgattat
                                                                        540
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acctggcaaa catcatcaaa cccctcaata ttctacacct atggaacagc accacccaga
atttcgatcc cttttgtggg cattacaaac gcgtactcac atttttatga cggatatgcg
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actgtaccac tcaagacaga cactacggat ccgggggcgg ccttctatgg agcagtttcc
                                                                        720
atcaatgact ttggtttgtt ggcggtgcga gttgtcaacg agcacaaccc ggtaagagtg
                                                                        780
                                                                        840
tcttcaaaga taagagtgta catgaagcct aaacatgtca gagtgtggtg cccacgacca
                                                                        900
ccacgtgccg tggagtacta cggaccaggg gtagattaca aggcaaacac attgacacct
                                                                        927
ctccctacca agaacttaac tacttat
```

540 600

660

720

780

840

900 909

accacctat

```
<210> 38
<211> 888
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 38
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gttcaagata cgcaatctag tggaccagtt aactcaaaag aagtacctgc attaacagct
                                                                       120
gttgaaacag gggctactag tcaagttgac ccatcagacc taatagaaac tagacatgtt
                                                                       180
attaataacc gcctcagatc tgagtgcaca atagaatcat tctttgggag gtcagcatgt
                                                                       240
gtggccataa ttgggttatc taaccaaaaa cccaccagtg acaatgcagc caagctcttt
                                                                       300
gctacatgga agattagtta tcttgatatg tatcaattga gaagaaaatt ggaattcttc
                                                                       360
acatactcca gatttgatct tgagttaacc tttgtaattt cagaaagatt cttcacctca
                                                                       420
acttcagctg ctgcaagaga ttatgtatac cagatcatgt acattccccc aggagcccct
                                                                       480
                                                                       540
atccctcagg tatgggatga ttacacatgg caatcatcca caaacccctc aatattctac
                                                                       600
accacaggaa atgcatgccc tagagtgtcc atcccttttg ttgggatcgg tgcagcatac
tctcacttct atgatggatt ctctttagta cctttcaata ccatcgatgc tggtgcttca
                                                                       660
aacaggtacg ggtacaccac cataaatgat tttgggacta tggcaatcag gatagttaat
                                                                       720
gaatacgacc cagtcacaat tgatgcaaaa gtcagggttt acatgaaacc aaagcatatt
                                                                       780
aaggtgtggt gccccagacc tccacgggca gtagcataca atgggccaac agtgaatttt
                                                                       840
                                                                       888
aatgaaaacc cccatgtaat gacagcagtt gctgatatta gaacttat
<210> 39
<211> 909
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 39
                                                                        60
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cccagcacac aacagagttt accaaacact agtagctcag aaccaactca ctctcaggaa
                                                                       120
                                                                       180
qcqccqqcat tqaccqcagt agaaacagga gcaactagta gcgtagtacc agctgatctg
gtccagacgc ggcatgtgat acaaacacgt agccgaagtg agtctacagt tgagtcattc
                                                                       240
                                                                       300
tttgctcggg gggcgtgtgt aacaatcatg tcagtggaaa attacaatga aaccgctatc
gcagagtcca aattatttac caagtggaac attacctaca cagacacagt ccagttgaga
                                                                       360
                                                                       420
agaaaactag agatgttcac atactccaga tttgatattg agttcacatt tgtggtgact
```

gagcgttacc actccgcaaa ctcaggtcat gcactaaatc aagtttacca gatcatgtat gttcctccag gtgcaccagt gccacaaaga tgggacgact acacatggca aacgtcatcc

aacccctcag tcttttatac ctatggtaca gcaccagcca gaatatcgat tccatatgta

qqcataqcca atqcctactc gcatttttat gatggcttcg ccaaagtgcc cattgaaggc

gagacgtcag atccaggtga tgcatactat ggtgcaacgt ccatcaatga tttcggcatc

ttagccatac gtgtggtcaa cgaacacaat ccagtgcaag tttcttccaa gattagagtg tacatgaaac ctaaacatgt gcgcgtttgg tgtcccagac cacctagagc tgttccatac

tttggccccg gggttgatta taaaggtgac gccctcacac cactatcacg caaggattta

780

840

```
<210> 40
<211> 888
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 40
                                                                        60
gggattgagg atacaatcga aaaagtggtt ggtgatgctc taagggtctc aatgccacaa
gttgccaaca cccagccatc aggacccgta aattctaagg aagttccagc actgacagca
                                                                       120
gtggaaacag gtgcaaccag tcaagtcacc cctgaagatt tgatcgaaac caggcatgtt
                                                                       180
                                                                       240
attaacaata gactaagatc tgagtgcact gtggaggcct tctttggaag gtctgcatgt
gttgccatcc ttggtgtggt aaacaaaaag ccagacacca caaatgccaa agacctcttt
                                                                       300
acaacatgga ggatcactta cctgcaaact tatcaactga ggaggaaact cgaactcttc
                                                                       360
acgtattcta gatttgattt ggaattaacg tttgtcatta cagaaagata cttttcaggg
                                                                       420
acagcagcca caaccagaga ttatgtttac caaataatgt atgtaccacc aggagccccc
                                                                       480
ataccaaata cctgggacga ctacacctgg cagtcatcta ccaacccctc tgtcttctac
                                                                       540
accacaggca atgccagccc acgcatgtct ataccctttg ttggtattgg tgccgcctat
                                                                       600
                                                                       660
gctcactttt atgacgggtt cagtgtggta ccattcaatc aaatagatgc aggagcatcc
                                                                       720
aacaaatatg gctactcatc aatcaaagac tttggtacat tggcagttag aattgttaat
                                                                       780
gagtttgatc cagtgacaat agaggctaaa gtcagagtgt acatgaaacc caaacatgtc
agggtgtggt gtccaagacc acctcgtgca gtaccatatc aaaactcatc agttgatttc
                                                                       840
                                                                       888
gcccaaaacg cagtagcaat gaaccaagta gccacaatta ggacgtat
<210> 41
<211> 915
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 41
ggtatcgaag ataccattga cactgtcatt aacaatgccc tacaactatc tcaaccacag
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ccaaataagc agttgacagc tcagtctacc ccctccacaa gtggagtaaa ctcccaggag
                                                                       120
gttccagctc tgaccgctgt ggaaaccggt gcctcgggac aagcagtgcc cagtgatgtg
                                                                       180
                                                                       240
attgagacca gacacgtggt taattataag acccgatctg aatctactct tgagtctttc
                                                                       300
tttggaaggt cagcttgtgt caccataatt gaggtcgaga acttcaatgc cactagtgaa
gcagacaaga ggaaacagtt caccacttgg ccaatcacat acaccaatac cgtgcaattg
                                                                       360
cgcaggaaac tagaattctt cacttactcc aggtttgacc tagagatgac ctttgtagtg
                                                                       420
                                                                       480
acagaaagat attatgccag caacacaggt cacgccagaa accaagtgta tcaaataatg
                                                                       540
tacattcctc ctggtgcacc acaacccaca gcatgggatg attacacgtg gcaaagctct
                                                                       600
togaatccgt cagtotttta cacttatggg agtgctccac ccaggatgtc tataccgtat
                                                                       660
gtcggtatcg caaatgcata ctctctttt tatgatgggt ttgcacgagt accactgaag
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gacgaaacag cggactcagg tgatactttt tacgggctag tcaccatcaa tgattttgga

accttagcaa taagagtagt gaatgaattt aacccagcta ggattacatc aaaaattaga

gtgtatatga aaccaaagca tgtaagatgc tggtgcccta gaccaccacg tgcagtgcca

```
taccgtggtg aaggagtaga ttttaattca agttcaatca caccactaac agcagtcgca
                                                                       900
                                                                       915
aacatcaaca cattc
<210> 42
<211> 852
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 42
agcccagtgg aggaatccat tgagagaagc attggcagag ttgctgacac cattggtagt
                                                                        60
ggaccatcca attcggaggc aataccggca ctcacagcag tagaaacagg acacacatca
                                                                       120
caggttacac ctagtgacac gatgcaaaca agacatgtgc acaactacca ttcaaggtcc
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gaatccagcg tagagaactt cctggcacgc tcggcttgtg tgttttatac aacatacacc
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aacggtaaaa aaaaaaatgc cgccaaagag aagaagtttg caacgtggaa agtgagtgtt
                                                                       300
agacaagccg cccaactaag aagaaagcta gagttattca catacttacg ctgtgacatc
                                                                       360
                                                                       420
quattacat toqtoatcac cagtgoacaa gatocatoga cogotaccaa cttggatgtg
ccagtgttga cccatcaaat aatgtacgtc ccacctggtg gtccagtccc tgaaaccgtg
                                                                       480
gacgattaca actggcaaac atctacaaat cccagccttt tttggactga agggaatgca
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cctccacgca tgtcaattcc attcatgagc ataggcaatg cctatagtat gttctatgat
                                                                       600
                                                                       660
ggttggtccg agtttaggca tgacggtgtg tacggcctga atacccttaa caatatgggc
                                                                       720
acaatatatg ctaggcacgt caacgctgac aacccaggta gcatcaccag cacagtgaga
atatacttca aacccaaaca tgtcaaggca tggattcctc gcccgcctcg tttggcacag
                                                                       780
tatcttaaag ccaataatgt gaattttgag atcaccgatg tgacagaaaa gagagatagt
                                                                       840
                                                                       852
ctcacgacca cg
<210> 43
<211> 846
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 43
agcccagtgg agggcgccat agagagagcc attgcacggg tcgctgacac tatgccaagt
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ggcccaacca attcagaagc agtgcctgcc ctgacagcag tggaaacggg ccacacctcc
                                                                       120
caagtcgtcc ccagtgataa catgcaaacc aggcacgtga agaagtacca ttcacgctcc
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gaaaccagcg tcgagaactt tctgtgtagg tctgcatgtg tatattttac cacatataag
                                                                       240
aaccagacag gggcgaaaaa tagatttgct tcttgggtaa tcaccacaag acaagtggcc
                                                                       300
cagctcagga gaaaactaga aatgtttacg tacttgcgtt tcgacattga actcaccttt
                                                                       360
                                                                       420
gtcattacaa gtgcgcaaga ccaatccact atttcccaag acgcccctgt gcagacacat
cagataatgt acgtgccacc gggaggccca gtgccaacca aagttgacga gtatgtgtgg
                                                                       480
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caaacatcca ccaaccccag cgtcttttgg accgagggta acgctccacc acgtatgtca
                                                                       600
qttcccttta tqaqtatcqq taatqcttat agcacatttt atgacgggtg gtctgatttt
tcaaacaaag gaatatatgg gttgaacacc ttĝaacaaca tgggaacatt gtacatccgc
                                                                       660
cacgttaacg ggcccaaccc agtaccaatt accagcacag tgaggatata ctttaagccc
                                                                       720
                                                                       780
aagcatgtta aggcctgggt gcctaggcct ccaaggcttt gccagtacaa aacgtttagg
```

```
caagtcaact ttacagtgac tggagtgacc gagagtaggg caaatataac caccatgaat
                                                                       840
                                                                       846
actaca
<210> 44
<211> 852
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 44
ggtgatgtgc agaatgctgt cgaaggggct atggtcaggg tggcagatac agtgcaaact
                                                                        60
tcagccacaa actcagagag ggtgcctaac ttgacagcag tagaaactgg tcacacttcg
                                                                       120
caggtagtac ctggtgatac catgcagact agacatgtga tcaacaatca cgtgaggtca
                                                                       180
gaatctacaa ttgagaactt ccttgccaga tcagcgtgtg ttttcttcct agagtacaag
                                                                       240
acagggacca aagaggattc caatagcttc aacaattggg tgattacaac caggcgagtg
                                                                       300
gctcaactac gtagaaaact ggaaatgttt acttacctac ggtttgacat ggaaatcacc
                                                                       360
gtggtcatta caagctcgca agatcagtct acatcacaaa accagaatgc accagtgcta
                                                                       420
                                                                       4:80
acaccaga taatgtatgt accaccaggg ggacccatac ccataagcgt ggatgattac
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agctggcaaa catccaccaa ccccagtatc ttttggaccg aagggaacgc tccggcacgc
                                                                       600
atgtcaattc catttattag cataggcaat gcgtatagta atttctacga tgggtggtct
cacttctccc agactggcgt gtatggcttc actactctga acaacatggg tcaattgttc
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ttccggcacg taaacaagcc caacccagcc gctattacaa gtgtggcgcg catttacttc
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aaaccgaaac atgtacgcgc ttgggtgcct agaccaccgc gcttgtgtcc atacatcaat
                                                                       780
agcacgaatg tcaactttga acccaagcca gtgactgaag tacgtaccaa cataataaca
                                                                       840
                                                                       852
acqqqtqcct tc
<210> 45
<211> 882
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
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                                                                       180
agcgatacca tacaaaccag acatgttcac aattaccata gtagaactga atccaccctg
                                                                       240
qaqaacttcc tcqqaagatc agcatgcgtg cacattgact cgtataagac caagggagtg
accggcgaga gcacccggta cgcatcatgg gagatcacca ctcgcgagat ggtgcagctg
                                                                       300
cggaggaagt gtgaactctt cacctacatg cgatatgatc tagaaatcac gtttgtgatt
                                                                       360
                                                                       420
acaagtcgcc aggagcaagg ggccaaactg tcgcagaaca tgccagtatt aacacatcag
                                                                       480
atcatgtatg tcccaccggg cgggcctata ccaaccagca acgagagtta cgcttggcaa
                                                                       540
acgtcaacga acccaagcgt gttttggaca gaaggaagct cgccaccacg aatgtcaata
                                                                       600
ccgtttgtta gcataggaaa cgcatacagc aatttctatg atgggtggtc gcacttctca
                                                                       660
caaaacggtg cgtatggtta cacggcacta aacaagatgg gtaggatatt cgtgcgccat
                                                                       720
gtaaacaaag agacaccact gcaagtcata agcacaatac ggatgtatat gaagcccaaa
cacgtgcggg cttgggtgcc aagaccacca cgcctgtgtc catacctgcg ggcgggtgat
                                                                       780
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ataaactttg aagtgactga tgttacagaa aaacgaaata acatcaatta tgtcccaacc
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<211> 879
<212> DNA
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<220>
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ggtccacgaa acactgagag cgtgcctgcc ctgacagcag tagagacagg ccacacctca
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caqqtcqttc ctqqtgacac aatgcagacg aggcatgtta agaactatca ctccaggaca
gagtcatcaa ttgaaaactt cctgtgcagg gctgcgtgcg tgtatataac aacatacaaa
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tcagctggtg gaacacccac agagcgatat gcaagttgga ggataaacac caggcaaatg
                                                                       300
gtgcagctca ggaggaaatt tgagctcttc acatacttgc gctttgacat ggaaatcaca
                                                                       360
                                                                       420
tttgtgatca caagcacaca agatcctggg acacaattgg cacaagatat gcctgtacta
actcatcage teatgtatat eccaectggg ggeeetgtte etaacagtge cacagatttt
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gcatggcaat catcaactaa tccaagtata ttttggacgg aaggctgtgc tccagcacga
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atgtcggtgc cgttcatcag cattggcaat gcctacacca atttttacga tgggtggtcg
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                                                                       660
catttcaccc aagaaggggt ttatgggttt aactcactga acaacatggg ccacatatat
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gtgaggcacg tcaatgagca aagcctgggt gtctcgacca gcaccgttcg cgtgtatttt
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agttcaaatg tgaatttcaa accgaccgct gtcactgatg agcgaaagga tatcaacgat
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<210> 47
<211> 843
<212> DNA
<213> Artificial Sequence
<220>
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qqtccctcaa ataatqaagc tatacccaat ttaacagcag tggagactgg ccatacctcg
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gagtcgtcca tcgagaattt cctggcacgt tcagcatgcg tgtactacct tgattaccaa
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acgggagaag ggcccggcga tcagtatttt ggccagtgga ccattaccac gaggagggtt
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gcgcaattgc gtcgaaagct ggagatgttc acttatctaa gatttgacat ggaaatcaca
                                                                       360
                                                                       420
atogtgatta ctagttcaca ggatcaatot accatotoga acccagatac accagttttg
acgcaccaaa ttatgtatgt accaccagga ggaccaatcc cagcaaaagt cgatgattac
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                                                                       540
agttqqcaaa catccacqaa tcccagcgta ttctggactg aagggaatgc gcctgcccgr
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atatccatcc cattcattag cgttggaaat gcatacagta gcttttatga cgggtggtcg
aacttctcac aaaacgggcg gtatggctac aataccctca acaacatggg acaattgttc
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tttaggcacg ttaacaaacc cagccctaat actgtcacaa gcgtcgcccg catatacttc
                                                                       720
aagectaage aegtgagage ttggateeeg egaceaeege ggttgtgtee atacataaat
                                                                       780
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gcgggagacg tgaacttcac tccgacacca gtgactgaaa agcgaaagga cctaataacc
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                                                                       843
acg
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<211> 843
<212> DNA
<213> Artificial Sequence
<220>
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ggcccctcaa acaatgaggc tatacccaac ttaacagccg tagaaactgg acacacctcg
                                                                       120
caggtgacac cgggtgatac aatgcagacg cgccacgtag tgaacatgca cactcgttct
                                                                       180
gagtcgtcaa tcgagaactt cctggcgcgg tcagcatgtg tatactacct cgattaccga
                                                                       240
                                                                       300
acaggaacgg ggcctggcaa tcaatacttt agccagtgga ctattaccac aagacgagtt
gcgcagctgc gtcgaaaatt ggagatgttc acctatctaa ggttcgacat ggagatcacg
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attgtaataa cgagttcaca agatcagcct accgtccgaa acccagacac accggtcttg
                                                                       420
acacaccaaa tcatgtatgt gccaccagga gggccaatcc cagcaaaggt cgacgattac
                                                                       480
                                                                       540
tgttggcaaa catccacaaa ccccagtgtc ttctggactg aagggaacgc accagcccgg
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aatttctcgc aaaatgggcg gtatggctac aacaccctga acaacatggg gcaattgttt
                                                                       660
ttcaggcatg tcaataaacc cagtcccaac actgtcacaa gtgttgcccg catatacttc
                                                                       720
aagcccaaac acgtgaaggc atgggtcccg cgaccaccgc gattgtgccc ttacattaat
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gctggagatg taaatttcac ccccacatcg gtcactgaga agcgagcgag cctgataacc
                                                                       840
                                                                       843
<210> 49
<211> 843
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<213> Artificial Sequence
<220>
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ggaccetega acaacgaage aatacecaat ttgacggeeg tggaaacagg geatacateg
caagtgacac caggcgatac aatgcagacg cgtcacgtgg tcaacatgca cacccgttca
                                                                       180
                                                                       240
gagtcatcaa ttgagaactt cctagctcga tctgcgtgtg tgtattacct cgactatcaa
                                                                       300
acagggtcag gacctggcac ccaatacttc ggccagtgga ccatctccac aaggagagtt
                                                                       360
gcgcaactgc gccggaagtt ggaaatgttc acctacctaa gatttgacat ggaaataaca
atcgtgatca ccagttcgca agatcactcc accatctcaa atccagatac accaatcatg
                                                                       420
                                                                       480
acgcaccaaa ttatgtacgt accaccaggg ggtccaatcc cggcgaaggt cgacgactat
                                                                       540
agctggcaaa catctacaaa ccctagtgta ttttggacag aagggaacgc acccgcccgc
                                                                       600
atatccattc cattcattag tgtcggaaat gcctatagca gcttctacga cgggtggtca
aatttctcgc aaaacggccg atatggatac aacactttga acaacatggg acaactattc
                                                                       660
                                                                       720
ttcagacacg tgaataagcc cagccccaac accttcacaa gtgttgcccg tgtatacttc
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aagccaaaac acgtgaaggc gtggattcca cgaccaccgc gattatgtcc atacataaat

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gcgggagacg tgaatttcaa accaacaccc gtgaccgaaa agagggcgag cttaatcacc
                                                                       840
                                                                       843
aca
<210> 50
<211> 876
<212> DNA
<213> Artificial Sequence
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ggcccgtcaa actcccaaca ggtccccgct cttactgcag ttgaaactgg acacacatcg
                                                                       120
                                                                       180
caagttgttc caagtgatac catccaaacc agacatgtgc agaatttcca ctctaggtcc
gagtcgacca ttgaaaattt cctgagtagg tcagcatgtg tgcatatcgc caattacaac
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gcgaagggcg ataagacgga tgtggacagg tttgacaggt gggagatcaa cattcgtgaa
                                                                       300
atggtgcaac tacgtaaaaa gtgtgagatg ttcacatatc tacgctatga tattgaagtt
                                                                       360
                                                                       420
acatttqtta taaccaqcaa acaggatcag ggccccaaac taaaccagga tatgcctgtt
                                                                       480
cttacccacc aaattatgta cgtaccccca ggaggttcag tacctagcac cgttgagagc
                                                                       540
tatgcgtggc aaacatcaac aaaccctagc gtgttttgga ccgaggggaa cgctccagct
agaatgtcca taccctttat cagcataggg aacgcttata gtagcttcta tgatggatgg
                                                                       600
tcacacttta ctcaaaaagg ggtctacgga tacaacacat taaacaagat ggggcagcta
                                                                       660
                                                                       720
tttqtcaqac atgtgaacaa acagaccccc acgccagtta ctagtaccat aagggtttac
ttcaaaccaa agcacattag agcttgggtc cctaggcccc cgcggttatg cccctatgtg
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aacaagacaa atgtaaactt catcaccaca caggtaacag aacctacaaa tgacctcaat
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                                                                       876
gacgtgccca agtctgagca taacatgcac acatat
<210> 51
<211> 867
<212> DNA
<213> Artificial Sequence
<220>
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                                                                       120
                                                                       180
caggtcgtcc ccagcgacac catccagacg cgacatgtga ggaattttca cgttcggtct
gagtcatcgg tagagaattt tcttagcagg tcagcttgcg tgtacatcgt ggagtacaaa
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acccgggaca cgactcccga caagatgtat gatagctgga ttatcaatac caaacaagtg
                                                                       300
gcgcagttga gaaggaagct ggagttcttt acctatgtca gattcgacgt ggaagttacc
                                                                       360
                                                                       420
tttgtcataa ccagcgtgca agatgactcc acaaaacgga acaccgacac cccagtgcta
actcatcaaa ttatgtatgt gccgccagga gggcccatac cacaagcggt ggacgattat
                                                                       480
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aactggcaaa cttccaccaa ccccagcgta ttttggactg aggggaacgc gccaccaagg
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atqtctattc cgttcatgag tgttggcaat gcatacagta acttctacga cgggtggtcc
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cacttttctc aaactggggt ttacgggttt aacaccctaa acaacatggg taagttatat
ttcaggcatg taaacgacag gactattagc ccaatcaaaa gtaaggtcag aatatatttc
                                                                       720
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aaacccaaac acgtgaaggc atgggtaccc agaccgccga gattgtgtga atacacccac

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aaggataacg tggactatga accaaagggg gtcacaacat cacgcacttc aatcaccatc
                                                                       840
                                                                       867
accaactcca cacacatgga gacgcac
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<211> 867
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ggacccagta attcagagag cataccggca ctgacggccg ccgagactgg ccatacttct
                                                                       180
caaqttqtgc ccagtgatac tatacagaca cgccacgtaa aaaactttca tgtgaggtcg
gagtcgtcag tagagaactt tctcagtagg tccgcttgcg tgtatatagt gggatacaag
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accacagatg cgacccctga caaaatgtat gacagctggg ttatcaacac aaggcaggtg
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gcgcagctaa ggagaaaatt agagttcttc acctatgtta ggtttgatgt tgaggtcacc
                                                                       360
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tttqtqataa caagcgtgca agacgattca actagacgga acacagacac ccccgttcta
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acccaccaaa tcatqtacqt accccaggt gggcccatcc cgcaggcagt ggacgactac
aattggcaaa cttccacaaa tcccagtgta ttttggacag aagggaatgc cccaccaaga
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                                                                       660
cacttetete aaactggggt gtacggttte aacaceetga acaacatggg caagetatae
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aaaccaaagc atgtgaaggc atgggtgccc agaccaccgc gattgtgtga atacacccac
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aaggacaatg tggattacga accaaaggga gtcacaacat cccgtacatc tatcacaatt
                                                                       840
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agcaattcca ctcatatgga aacatat
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gggccaagca actcagaaag cataccagca ctcacagcag ctgagactgg acatacctcg
                                                                       180
caggtcgtcc ccagcgacac catccagacg cgacatgtga agaattttca cgttcggtct
gagtcatcgg tagagaattt tcttagcagg tcagcttgcg tgtacatcgt ggagtacaaa
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gcgcagttga gaaggaagct ggagttcttt acctatgtca gattcgacgt ggaagttacc
                                                                       360
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tttgtcataa ccagcgtgca agatgactcc acaagacaga acaccgacac cccagtgcta
                                                                       480
actcatcaaa ttatgtatgt gccgccagga gggcccatac cacaagcggt ggacgattat
                                                                       540
aactggcaaa cttccaccaa ccccagcgta ttttggactg aggggaacgc gccaccaagg
                                                                       600
atgtctattc cgttcctgag tgttggcaat gcatacagca acttctacga cgggtggtcc
                                                                       660
cacttttctc aaactggggt ttacgggttt aacaccttaa acaacatggg taagttatat
                                                                       720
ttcaggcatg taaacgacag gactattagc ccaatcacaa gcaaggtcag aatatatttc
aaacccaaac acgtgaaggc atgggtaccc agaccgccga gattgtgtga gtacacccac
                                                                       780
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aaggataacg tggactatga accaaagggg gtcacaacat cacgcacttc aatcaccatc
                                                                       840
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ggtcctagta attcgaccag tatcccagca ctcacagcag ttgagacagg tcacacgtca
caagtcgagc ccagcgatac agtgcaaact agacatgtca aaaactacca ctcgcgttct
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gagtcaaccg tggaaaactt tctaagtcgc tccgcttgtg tgtacatcga agagtactac
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accaaggacc aagacaatgt taataggtac atgtcgtgga caataaatgc cagaagaatg
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gtgcaattga ggagaaagtt tgagctgttt acatacatga gatttgatat ggaaatcacg
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acccaccaga tcatgtacat accaccaggt ggcccggtac caaacagcgt aacagatttt
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gcgtggcaga catcaacaaa ccccagtatt ttctggacag aaggaaacgc gccacctcgc
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                                                                       600
atqtctattc cattcatcag tattggcaat gcatatagca acttctatga cgggtggtca
                                                                       6.60
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gcacgtcatg ttaacaagga cacaccatac cagatgtcaa gcacaatccg agtgtatttc
                                                                       720
                                                                       780
aaacccaagc acatccgagt atgggtccca cggccgcctc gactgagccc gtacatcaaa
tcaagtaatg taaattttaa ccccacgaac ctgacggacg agcggtcatc catcacatat
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                                                                       180
caggtagtgc ccggcgacac tatgcagacc aggcacgtag tgaacaagca tgtgcgatct
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qaatctacaa ttqaaaattt cctcgcacgt tcagcctgtg tgtactttct tgagtacaag
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gcgcagctga ggcgcaagtt ggagatgttt acatacttaa ggtttgatat ggagattact
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actcaccaga ttatgtatgt accacctggt ggcccagtgc ccactagcgt tgatgattat
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catttctcac agaacggagt ctatggtttt accaccttaa acaacatggg ccagctgttt
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                                                                       720
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agtagcaacg tgaacttcga cccaaaacct gtggcagagg tcaggtctag catcatcacc 840 843 acc <210> 56 <211> 876 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence; Note = synthetic construct <400> 56 60 ggtgatgtgg ttgaagccat tgagggcgca gttgctagag tagcagacac tatcagcagc ggcccaacaa attctcaagc agtcccagca ctcacagcgg tggagactgg acacacctcg 120 180 caagttgtac caggtgatac catgcagacc agacacgtaa agaattacca ctcacgatca 240 gaatcgacca ttgaaaattt tctgagtagg gcggcttgtg tctacatggg tgagtattac actacaaata cagatgagac caagagattt gctaattgga caatcagcgc aaggcgcatg 300 gtacaaatga ggaggaagct tgaaatgttc acgtacgtcc gtttcgacgt ggaggtgaca 360 ttcgtaatta ccagcaaaca ggaccaaggg aatcggttgg gacaagatat gcccccgctc 420 acacaccaga taatgtacat cccgccaggt ggtcgtatac ccaaatccac cacagattac 480 gcatggcaaa cgtcgacaaa ccccagcatc ttttggacgg agggtaacgc gccccccagg 540 600 atqtccattc ctttcatgag cattggaaac gcatatagca atttttatga cggttggtct 660 cacttetete aaaatggegt gtaeggatat aacacactaa accacatggg teaattatae atgcgccatg taaatggacg atcacctctt ccaatgacca gcacggtgag ggtgtacttc 720 aaacccaaac atgtgaaaac atgggtgcca cgacccccaa gattgtgcca atacaaaaac 780 gcctcgacag taaacttttc acccacaaac atcacagaca agagggatag catcacttac 840 876 attccagaca ccgtgaaacc cgacatgaca acatat <210> 57 <211> 861 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence; Note = synthetic construct <400> 57 ggggatgaga gtgcaaaggc tacagtttcc aacacacagc ctagcggtcc aagtaattct 60 120 qtcaqcqtqc caatgcttac tgctgctgag accgggcaca catctcaagc agtacccagt gacactatac agaccaggtg cgtagtgaac caacacaagc ggtcggaatc atccgtggaa 180 aatttcctgt gtcgctccgc ttgcgtatac tacacaacct atgacactca cggggatgca 240 geegaegeaa agtaegeeag ttggaegata accaecegaa aagetgeaca getgeggaga 300 aaactagaga tgttcacata cttgaggttt gatttagaag tgacattcgt tataacaagt 360 420 gcacaagtaa catctaccaa taaacgtcag gacacgcctg ttctcacgca tcaagtcatg tacgtgccac caggtggtgc agtacccgct agtgtggacg attatgcgtg gcagacgtcc 480 540 acaaacccaa gtatcttctg gacggaaggg aatgcaccag cacgcatgtc tatacccttt 600 atcagegtgg geaacgeata cagtagette tatgatgggt ggteeaactt tacacagaat 660 ggagtttacg ggttcaacac gctaaacaac atgggaaagc tatacgtacg acacgtcaat 720 ggagctagcc ccggccctgt gaagagtacc atacggtttt acatgaagcc caaacacgtg 780 aaggettgga tacccagace teetegeete tgegagtaeg aaaaateagg caatgtaaae

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ttcaaaccca agggcgtgac agagagccgg acgtctatca aattagaaaa accaaaccct
                                                                           840
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    gcgtccaaat taatgaacca c
    <210> 58
    <211> 894
    <212> DNA
    <213> Artificial Sequence
    <220>
    <223> Description of Artificial Sequence; Note =
          synthetic construct
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ti,
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                                                                           120
                                                                           180
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    accagctacc aggagcaggg cacacgattg gcccaggaca tgcctgtact aacaccacaa
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caagtggtgc ctggtgataa catccaaaca cgtcatgtgc acaactacca ctccagaact
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840 caagggagcg ttgacttcaa ggtgcaggga gtaactgatg ctcgtacctc gctcaccact 843 aca <210> 64 <211> 885 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence; Note = synthetic construct <400> 64 aatgacccag cacaagccgt gttgagtgcg atcggtcgtg tcgctgacac cgtcgctagc . 60 gggccatcga attcagagag agttccagtt ctaaccgctg cggagacagg tcatacctca 120 caggtggttc ccagcgatac cattcagacg cgccacgtcg tcaacttcca cacaagatcg 180 gagtcaacaa ttgaaaattt tatgtgtcgc tccgcctgcg tgtacatcgc ccggtacggt 240 actgaaaagc aaggggaaca aatatccaga tacaccaagt ggaagatcac cactaggcag 300 gtggcgcaac tgcgcaggaa gatggagatg ttcacataca tgcgatttga tttggaaatg 360 acatttgtaa tcacaagctc ccagcgtatg tcaacggcat atgattcaga cacaccagcc 420 480 ctcacccacc aaataatgta cgtgccacct gggggcccgg agccccgtca ttatgaggat 540 ttcgcctggc agacatccac aaatccaagc atattttgga ccgaaggtaa cgcaccacca cgcttatcaa tcccatttat gagtgtggga aatgcctatt gcaattttta tgatgggtgg 600 tctcactttt cacaaagtgg agtgtatggg tttaccacct taaataacat gggacaactg 660 ttcatgcgcc atgtcaataa gtcaacagcg caccccattg atagtgtggt gcgagtttat 720 780 tttaaaccaa agcatgttaa ggcgtgggtt ccaagacctc cccggttgtg cccatacatc tatgcaagga acgtggattt tgagccacaa ggtgtcactg aatcaagaga aaagataaca 840 885 ctagataggg atactcacac ccctatgcgc acatgcgggc cgttc <210> 65 <211> 882 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence; Note = synthetic construct <400> 65 60 ggagatgtct gtgaggaagt agagagggct attgtcaggg ttgcagatac tgtcggacgc ggtcctgcta acactgagag tgtaccagcg ctgactgcag ttgaaactgg acacacttca 120 180 caagttgtac ccggggacac catgcaaacc agacatgtta aaaactttca cacgcggtca 240 gaatcatctg tggaaaattt catgtgcaga gcagcgtgtg tgtattatgt ggattaccac 300 acacaaaatg acagtgagga tgaaaaatat gcatcttgga ttatcaacac gagacaggta 360 gcacagctac gcaggaaaat tgagctgttc acatacacta ggtttgatgt cgaaatcaca 420 ttegtgatea ecaceacaea geageaatee acageteeca acceegacae teetetgetg 480 acaccacaa tcatgtatgt gccccgggt ggcccagtgc caaatagtgc taccgattat 540 tgttggcaat catccacaaa tcccagtata ttctggaccg agggtagcgc accacccaaa atgtcaatac cctttataag tgtgggaaat gcatacagca gtttttatga tgggtggtca 600 catttcactc aaaacggggt gtacgggttc aacactctga acaatatggg caaattatac 660 720 ttcaggcacg taaatgacaa caccgtaggg ccatatgtga gcaaagcccg catttatttc

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840
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    tttgggaggg ctgcgtgtgt gagggtgaga gagtactcta tagggcatga tttggcagcg
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                                                                           300
    gacgaaacat atgatagctg ggccattaca gtgcgagaca tggtgcagct tcgtaggaag
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    tqtqaqatqt tcacatacat gaggtttgac ttggaagtga cgctagtcat caccagctat
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    caaqaaccaq qqacaatcac cacccaggat atgcccgtcc taacccacca gattatgtat
    gtgccgccag gaggcccggt cccagccaag gctgacagtt acgcgtggca aacgtcaaca
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    gtgtatggct acacaaccct gaataacatg ggtaaactgt acttcagaca cgtgaacaaa
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    cacagoccaa acactattaa gagcactgtg aggatatatt tcaagoccaa gcacgtccag
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    gcgtgggtcc caagaccacc gcgcttgtgc ccgtatctga ataagaggga tgtcaacttt
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    gaagtgcaac ccgttacgag caagagagac agtattaact gggtgccaca aacaaaccgc
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    gggcctgcaa actcagagca aatccctgcc ctaaccgctg ctgagactgg tcacacctcg
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    caagtggttc ccagcgacac tatgcaaacc cgccatgtat gtaactacca caccagatct
    gaatcatcga tcgagaactt cctatgcagg gctgcatgtg tctacatagt gagttacaaa
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    cactttagcc agtcaggggt gtatggttac accacactca ataatatggg taccctgtat
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aaaaagaacg tagactttac tcccacaggt gtgaccacaa ctagagacaa gataaccttg
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                                                                       540
                                                                       600
aggatgtcga taccattcat gagcgttggt aacgcatact gcaactttta cgacggatgg
                                                                       660
tcccatttca gccagagcgg tgtgtacggg tacactacat tgaacaacat ggggcacttg
tatttcagac atgtaaacaa atcaactgca tacccagtta acagtgttgc ccgcgtctac
                                                                       720
                                                                       780
ttcaagccca agcacgtaaa ggcttgggtg cctcgcgcgc cacgcttatg tccatatttg
```

st

```
tatgcaaaaa atgtcaattt tgatgtacaa ggtgtgaccg agtctcgggg aaaaatcact
                                                                   840
                                                                   876
cttgatcgat cgactcacaa ccctgtgtca accacg
<210> 72
<211> 877
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
     synthetic construct
<400> 72
aacgaccccg aacatgcgtt aaacaacgcc attggtagag tggcagatac gatcgccagt
                                                                    60
gggccggtga actcggaacg catacctgca ctaaccgcag tggagacagg acacacgtct
                                                                   120
caagtggtgc caagcgacac catgcaaaca aggcacgtag tcaacatgca tacaagatcc
                                                                   180
                                                                   240
gaatccacca tcgaaaattt catgggaagg gctgcttgtg tatacattgc gcaatacgcc
actgataagg ccagtgatga tctggacagg tacaccagct gggagatcac tacgagacag
                                                                   300
gttgcgcaat tgaggagaaa gctggagctg tttacataca tgaggtatga cttagaagtt
                                                                   360
acctttgtca ttaccagttc ccagcgcact tcgactacat atgcatcaga ctccccgcca
                                                                   420
ttgacccacc aaattatgta tgtgcctccc gggggcccta ttcccatagg acacgaagac
                                                                   480
                                                                   540
ttcgcctggc agacttcaac aaaccccagt gtcttttgga ctgaaggaaa tgccccacca
cgtatgtcca taccattcat gagtgtgggc aatgcctact gcaattttta cgatgggtgg
                                                                   600
660
tatttcaggc atgtaaacag atctactgcc tacccagtta atagtgttgc acgtgtttac
                                                                   720
                                                                   780
tttaaaccca aacacgtcaa agcctgggtc ccacgagcac cacgattgtg cccatacttg
tatgctaaga acgtgaactt taatgtgcaa ggtgtgactg actcccgaga caagataacc
                                                                   840
                                                                   877
gtagaccgaa ccaaccatgt acgtatgcgc accacag
<210> 73
<211> 876
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
     synthetic construct
<400> 73
aacgaccccg aacacgtgtt aaacaatgcc gttggcagag tggcagatac aatcgccagc
                                                                    60
gggccggtga actcggaacg cgtacctgca ctaactgcag tggagacagg gcatacgtct
                                                                   120
caagtggtgc caagcgatac tatgcaaaca agacacgtag tcaacatgca cacaagatct
                                                                   180
gaatccacta tcgaaaattt catgggaagg gctgcttgtg tatacatcgc acaatacgct
                                                                   240
actgacaaag ccagtgacga tttggatagg tacaccagct gggaaatcac cacgagacag
                                                                   300
gttgcgcaat tgaggagaaa gttggaaatg ttcacataca tgaggtatga cctggaagtc
                                                                   360
acctttgtta tcaccagttc ccagcgcacc tcgactacat atgcatcaga ttccccacca
                                                                   420
                                                                   480
ttgactcatc agatcatgta cgtgcctccc gggggcccca ttcctatagg atacgaggac
                                                                   540
ttcgcctggc aaacatcgac taaccctagt gtcttttgga ctgaaggaaa tgccccacca
                                                                   600
cgcatgtcca ttccatttat gagtgtgggc aatgcctact gcaattttta cgatgggtgg
                                                                   660
tatttcaggc atgtaaacaa atctactgcg tacccggtta atagtgttgc acgtatttac
                                                                   720
ttcaaaccca aacatgttaa agcctgggtc ccgcgagcac cacgactgtg cccatatttg
                                                                   780
```

| | taatgtgcaa gcccatgcgt | actcccgaga | aaagataacc | 840 876 |
|----------|--------------------------|------------|------------|------------|
| <210> 74 | | | | |

<211> 876 <212> DNA <213> Artificial Sequence

<220>

<400> 74 60 ggggacacgg aacatgcagt tgagtcagct atctccaggg tagcagatac cattagctca 120 ggtcctagta acactgttgc tataccagcg ctcaccgcgg cagaaacggg ccacacatcg caagtcaccc ccagcgacaa tcttcagacg cgccatgtta agaactatca ctcccgctct 180 240 gagtcaacta ttgaaaactt cctgtgtaaa tccgcgtgtg tgcatattgc gtcatacaac gcatacggtg atgttggatc agacagtaga tatgatagtt gggagatcaa catcagggaa 300 atggtgcagt taaggaggaa gtgcgaaatg ttcacctatc tcagatttga catggaggtg 360 acatttgtca tcactagcaa gcaagatcaa gggacttcgc tatcacaaga catgccagtg 420 ctaacacatc agatcatgta cgtgccgcca ggcggatccg tgcccactag cgtccagagc 480 tacgcatggc aaacatccac caacccgagc gtgttttgga cagagggcaa tgcccctgct 540 agaatgtcca tcccattcat tagcataggg aatgcataca gcagcttcta cgacgggtgg 600 660 tcacatttca cccaacaagg tggctatggc tataatacac tgaacaagat gggtaagttg tttgtaaggc atgtgaataa agaaacacca acccatgtga cgagcacgat acgtgtatat 720 tttaaaccaa agcatgttag agcgtgggtg ccaaggccac ctagattgtg cccgtacatc 780 840 aataaagcgg actgtaactt cgctgttaca ccactcacca aacagcggtt aggaatcaac 876 gatgtcccgc ggcccagcca cacattacat actcat

<210> 75 <211> 875 <212> DNA

<213> Artificial Sequence

<220>

<400> 75 60 aacgaccccg caaccgctat tgaaggagca gtccggcgag tggcggacac gatccagagc ggaccgagca attcggagcg ggttccagcg ttaacggccg ttgagacagg tcacacagca 120 180 caggttaccc cgagtgatac aatgcaaact agacatgtac acaacttcca caccagatcg gagtctagca tcgagaactt cctcagtaga gcagcttgtg tgtacatagg gaaatatagt 240 agcaatgcaa caacacaaga tgaacaatac atgtcatgga caattaatac cagacagatg 300 gtgcagctga gacgcaaatt cgaaatgttc acctacctac gcttcgacgt agaagtcact 360 tttataataa catcgcacca agatcaaggg acacagttca accaggatgc gcccgtaatg 420 tgccaccaaa tcatgtatgt gccacctggt ggcccggtgc ctaagagtgt tgatgacttc 480 540 acatggcaaa cctctactaa ccctagtgtc ttttggtcag aaggcaatgc accaccgaga 600 atgaccattc cattcattag tatagggaac gcctacagca gcttttatga tggctggtca cacttctctc aaaatggggt ttacgggttt aatgcactca ataacatggg taaactgtat 660 720 gtgagacaag tgaacctaaa agcccctatg ccagtcagca gtacagttag gatctatttc 780 aaacccaagc atatcaaagc ttgggtaccc agaccaccgc gtctatgtaa gtacctgaag

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tctgggagtg tcaattttga gcccactgat ttgacagaaa aacggaaatc cagaaagtac
                                                                       840
                                                                       875
atcccaaaaa ctttcagacc agatgtgaga accat
<210> 76
<211> 843
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 76
                                                                        60
ggtgatgtgc atgatgcagt tgtgggtgcg atgtcgcgcg tcgctgatac agtagcaagt
ggccctgcaa actctgagag cgtgcctgct ctcactgcgg tagaaactgg acacacgtca
                                                                       120
caggtgacac caagtgatac aatgcagacc agacacgtac acaacttcca cacacggtcc
                                                                       180
gaatcgtcaa tcgagaactt cttaagccgc tctgcatgtg tctattatgc aacgtacaaa
                                                                       240
acaacagcca gcagacccga agaccaattc gttaggtggt ccatttcata ccgccaggtg
                                                                       300
gcccaactgc gcaggaaaat ggaaatgttc acctacctgc gctacgatgt ggaggtcact
                                                                       360
                                                                       420
tttgtgatta caagttotca ggacccatcg accaacgtaa gccaggatgc tcctgtactc
acacatcagt taatgtacgt acccccggg ggtccagtgc ccaaaaattc aagagactat
                                                                       480
gcatggcaaa catccaccaa cccgagtgtg ttctggaccg aggggaacgc accaccaagg
                                                                       540
atatccatcc cctttatcag tgtgggcaac gcatacagtt gcttttatga tggatggtcc
                                                                       600
cactactcac agacggggt gtatggttac aacaccttaa acgacatggg ccaattattt
                                                                       660
                                                                       720
gtcaggcacg tgaatgaggc aagcccgggt gcggtgtcaa gtgtagttag gatttacttc
                                                                       780
aaacccaaac atgtgaaggc atgggtcccg agaccaccac ggttgtgcca atatgttaac
                                                                       840
gcagcaacgg tgaacttcac tcctgaaggg gtcactaagg cacgtactga tctcatgaca
                                                                       843
aca
<210> 77
<211> 915
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 77
                                                                        60
ggaatagaag aaactattga cacagtgatc accaacgctt tacaactgtc tcagcccaaa
                                                                       120
ccgcagaaac aactcactgc tcaatccacc gcctcatcca gcggagtcaa ttcacaagaa
                                                                       180
gtgccagcat tgactgctgt ggagacggga gcttctggtc aagccatacc cagcgacgtg
                                                                       240
attgagacca gacatgtcgt caattacaaa actagatctg aatcaaccct tgagtcattc
tttggtagat cagcatgcgt aaccatactg gaagtagaga acttcaatgc cactaccgaa
                                                                       300
toggacaaga aaaagcaatt caccacotgg ccaatcacat acaccaacac agtocagttg
                                                                       360
cgcaggaaat tggaattett tacatactee agatttgate tggaaatgae ttttgtcata
                                                                       420
actgagaggt accacacaag taatacagga catgctagaa atcaagtgta ccaaataatg
                                                                       480
                                                                       540
tacataccac cgggtgcgcc aaggcccaca gcacgggatg attacacctg gcaaagttca
                                                                       600
tccaatccat cagtgtttta cacatatggt agcgcgcctc ccagaatgtc tatcccatat
                                                                       660
gttggcattg ccaatgcata ctcacacttt tatgacgggt ttgcccgagt tcccctgaaa
                                                                       720
gatgatacaa ctgactccgg tgacactttt tatggattgg tcaccatcaa tgactttgga
                                                                       780
acattggctg tgagggtggt gaatgagttc aaccctgcaa ggataacatc aaaggtcaga
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| gtttatatga tatcgtggtg | aaggggttga | tgtgaggtgt tttcaaacaa | tggtgtccta gattcaatca | ggccaccgcg cgccaataac | cgcagtgccc agcagtcacc | 840 900 915 |
|--------------------------|------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------|
| aatattaata | ccttc | | | | | 915 |

<210> 78 <211> 936

<212> DNA <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; Note =
 synthetic construct

<400> 78 60 tcaaaccact tacatggagc agaggcagcc tatcaggtgg agagtatcat caaaacagca actgatactg tgaagagtga gattaacgcc gaacttggtg tggtccctag tctaaatgca 120 180 gttgaaactg gtgcaacttc caacactgaa ccagaagaag ccatacaaac tcgcacagta 240 ataaatcagc atggtgtgtc ggagacgtta gtggagaatt ttcttggtag ggcagcccta gtgtcaaaga aaagttttga atacaagaat catgcctcat ccagcgcagg gacacacaaa 300 aactttttta aatggacaat taatactaag tettttgtee agttaagaag aaagetggaa 360 ttattcacat accttaggtt tgatgctgaa atcaccatac tcacaactgt ggcagtaaat 420 ggtaataatg acagcacata catgggtctc cctgacttga cactccaagc aatgtttgta 480 540 ccaactggtg ctcttactcc aaaggagcag gattcatttc attggcaatc aggcagtaat 600 gctagtgtgt tctttaaaat ttctgatccc ccagctagaa tgactatacc ttttatgtgc 660 atcaactcag catattcagt tttttatgat ggctttgctg gatttgagaa aaatggtcta tatggaataa acccagctga cactattggc aacttgtgtg tcagaatagt gaatgaacat 720 caaccagttg gttttacagt gaccgttagg gtttacatga agcctaaaca tataaaagca 780 tgggctccac gaccaccgcg aaccatgcca tacatgagca ttgctaatgc aaattacaaa 840 ggtagagata cagcaccaaa cacacttaat gccataattg gtaatagagc gagtgtcaca 900 936 actatgcctc acaacatagt aaccaccggt ccgggt

<210> 79 <211> 861

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; Note =
 synthetic construct

<400> 79 60 aatgaccagc acaatggggc gatcgttgcc aacacaacag ctagcggacc ttctaattcg gaaagcatac cggcacttac tgcggctgag actggccaca catcgcaggt tgtccctagc 120 180 gacaccatcc agacaagaca tgtgaaaaac taccactcgc gttcagagtc caccatagag 240 aactteetgt gtagatetge etgtgtgtae tacaccaegt acaacaetea gggegageaa gcacatgata aatacgcaag ttggccaatc acgactagaa aagttgccca actgcgcagg 300 360 aagctggagt tetttaeeta eetgeggttt gatetegaga teaegttegt gateaegage 420 qcccaqatca catccacqaa ccaaaaccag gatgccccag tactcacaca tcaggtgatg 480 tatgtacccc cagggggggt ggtaccgcgc agtgtggatg actatagttg gcagacttcc 540 accaatccca gcatcttctg gacagaaggg aacgcacctc ctcgtatgtc aataccattc attagtgtgg gcaacgccta cagcagcttt tacgacgggt ggtcacactt tgaacaaacc 600 660 ggggtatatg gattcaatac ccttaataat atggggactt tgtacgccag gcacgttaac

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ggtgctagtc ccgggccagt caagagcacc attaggatat atatgaaacc taaacatgtg
                                                                       720
aaagcgtgga tacctaggcc cccacggttg tgcgactatg tgaaatctgg caacgtcaac
                                                                       780
tttgaaccaa aaggagtcac cgagagcaga ccatctataa agttagaaaa gacctcaagt
                                                                       840
                                                                       861
gggcacaggc tgacaaccca c
<210> 80
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 80
Met Tyr Val Pro Pro Gly Gly
<210> 81
<211> 7
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence; Note =
      synthetic construct
<221> VARIANT
<222> (0)...(0)
<223> Xaa = any amino acid
<400> 81
Met Tyr Xaa Pro Xaa Gly Ala
<210> 82
<211> 7
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence; Note =
      synthetic construct
<221> VARIANT
<222> (0)...(0)
<223> Xaa = any amino acid
<400> 82
Phe Gly Xaa Gln Ser Gly Ala
1
```

1 . 1 . 2

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<210> 83
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<221> VARIANT
<222> (0)...(0)
<223> Xaa = any amino acid
<400> 83
Thr Ala Xaa Glu Thr Gly His
<210> 84
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<221> VARIANT
<222> (0)...(0)
<223> Xaa = any amino acid
<400> 84
Thr Ala Val Glu Thr Gly Xaa
<210> 85
<211> 7
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence; Note =
      synthetic construct
<400> 85
Gln Ala Ala Glu Thr Gly Ala
<210> 86
<211> 7
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence; Note = synthetic construct

<221> VARIANT
<222> (0)...(0)
<223> Xaa = any amino acid
<400> 86
Met Xaa Xaa Pro Pro Gly Xaa